



# Indiana Crop & Weather Report

United States Dept of Agriculture

Indiana Agricultural  
Statistics Service

1435 Win Hentschel Blvd.  
Suite B105

West Lafayette, IN 47906-4145  
(765) 494-8371

Released: September 29, 2003

Vol. 53, No. 39

## CROP REPORT FOR WEEK ENDING SEPTEMBER 28

### AGRICULTURAL SUMMARY

Rain slowed corn and soybean harvest in most areas of the state during the week, according to the Indiana Agricultural Statistics Service. Precipitation was heavy in some regions early in the week and again on Friday night. Ponding in low lying areas of fields and flooding along river bottoms occurred again. Farmers were harvesting corn and soybeans in fields dry enough to support heavy equipment. Many corn and soybean fields are mature and ready to be harvested. Farmers continued making final preparations to harvesting equipment and grain bins.

### FIELD CROPS REPORT

There were **3.8 days suitable for fieldwork**. Virtually all of the corn acreage has now reached the **dent** stage. Sixty-two percent of the corn acreage is **mature** (safe from frost) compared with 71 percent a year ago and 86 percent for the average. By area, 54 percent of the corn acreage is mature in the north, 68 percent in the central region and 65 percent in the south. Eight percent of the corn acreage is **harvested** compared with 13 percent last year and 19 percent for the average. **Moisture** content of harvested corn is averaging about 24 percent. Corn **condition** is rated 62 percent good to excellent compared with 27 percent last year at this time.

Seventy-five percent of the soybean acreage is **shedding leaves** compared with 79 percent last year and 90 percent for the average. Forty-two percent of the soybean acreage is rated as **mature** compared with 48 percent last year and 67 percent for the average. Nine percent of the soybean acreage is **harvested** compared with 9 percent last year and 20 percent for the average. **Moisture** content of harvested soybeans is averaging about 14 percent. Soybean **condition** is rated 54 percent good to excellent compared with 31 percent last year at this time.

Major activities during the week were preparing equipment for harvest, spreading fertilizer and lime, cleaning out grain bins and taking care of livestock.

### LIVESTOCK, PASTURE AND RANGE REPORT

**Pasture condition** is rated 8 percent excellent, 54 percent good, 27 percent fair, 7 percent poor and 4 percent very poor. Seven percent of the **winter wheat** acreage is seeded compared with 7 percent last year and 8 percent for the average. Third cutting of **alfalfa** hay is virtually complete and some farmers have completed their fourth cutting of alfalfa hay. **Tobacco** harvest is 85 percent complete compared with 86 percent last year and 90 percent for the average. Livestock are in mostly good condition.

### CROP PROGRESS TABLE

Crop	This Week	Last Week	Last Year	5-Year Avg
Percent				
Corn Mature	62	38	71	86
Corn Harvested	8	5	13	19
Soybeans Shedding Lvs	75	57	79	90
Soybeans Mature	42	22	48	67
Soybeans Harvested	9	5	9	20
Winter Wheat Planted	7	4	7	8
Winter Wheat Emerged	1	0	1	1
Tobacco Harvested	85	69	86	90

### CROP CONDITION TABLE

Crop	Very Poor	Poor	Fair	Good	Excellent
Percent					
Corn	5	10	23	46	16
Soybean	6	10	30	45	9
Pasture	4	7	27	54	8

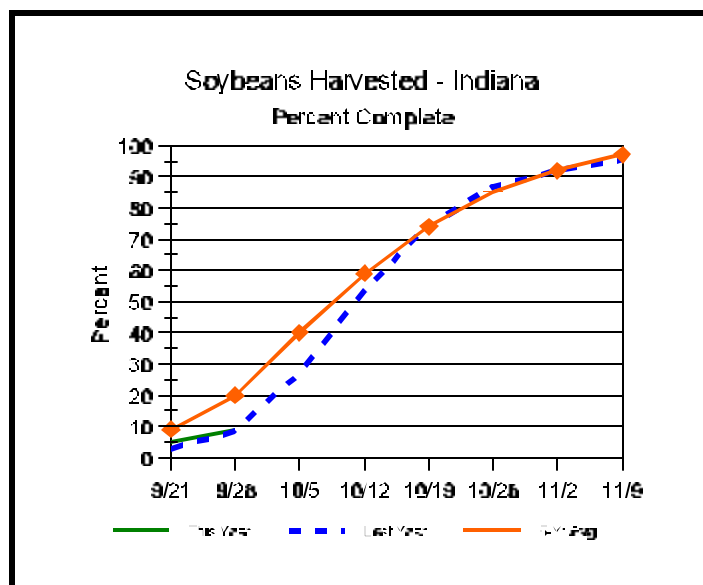
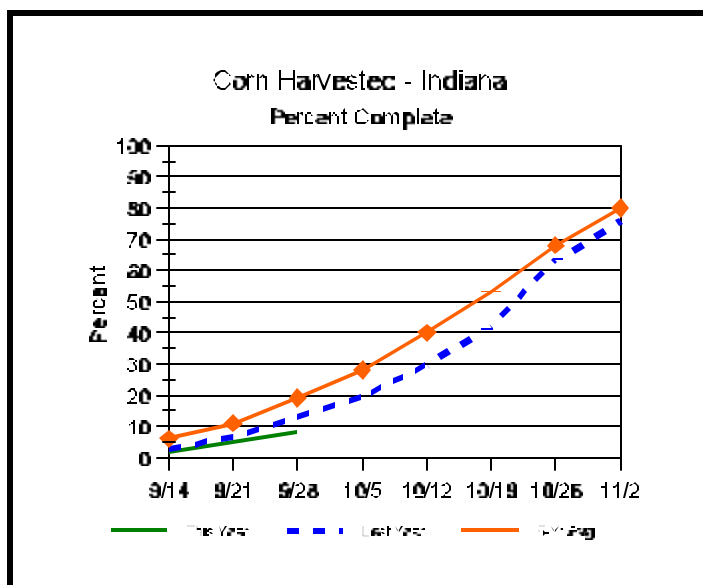
### SOIL MOISTURE & DAYS SUITABLE FOR FIELDWORK TABLE

	This Week	Last Week	Last Year
Percent			
<b>Topsoil</b>			
Very Short	0	2	14
Short	7	15	29
Adequate	71	78	50
Surplus	22	5	7
<b>Subsoil</b>			
Very Short	5	4	27
Short	11	14	43
Adequate	71	76	29
Surplus	13	6	1
<b>Days Suitable</b>	3.8	6.7	5.2

### CONTACT INFORMATION

--Greg Preston, State Statistician  
--Bud Bever, Agricultural Statistician  
E-Mail Address: [nass-in@nass.usda.gov](mailto:nass-in@nass.usda.gov)  
<http://www.nass.usda.gov/in/index.htm>

# Crop Progress



## Other Agricultural Comments And News

### Tip Fill Problems in Corn

One of the more common complaints overheard in recent days downtown at the Uptown Bar & Grill has to do with ears of corn that have not filled all the way out to the tip. Folks walking their fields scouting for stalk rot have also discovered ears with one to two inch barren tips. What are some of the causes of tip fill problems in corn and what are the yield consequences?

#### Causes

Barren tips of cobs result from some combination of an absence of kernel development and shriveled, aborted kernels. Each has a different set of possible causes.

An absence of kernel development indicates that pollination itself was not successful. The list of possible causes includes severe silk clipping by insects (corn rootworm or Japanese beetles) during the final stages of pollination, delayed silk emergence or deterioration of exposed silks due to excessive heat or drought conditions, silk emergence failure due to silkballing near the tip of ear, and lack of viable pollen due to excessive heat or drought conditions. Diagnosing the exact cause later in the grain fill period can be challenging.

The occurrence of kernel abortion signals the incidence of severe photosynthetic stress during the first few weeks of grain fill following the end of pollination. Tip kernels are especially vulnerable to abortion because they are the result of the final days of pollination and therefore are technically the youngest kernels on the ear and most sensitive to subsequent severe photosynthetic stress.

Factors that can severely limit photosynthesis include consecutive cloudy days, excessive heat and drought conditions (especially when accompanied by severely compromised root systems), and loss of significant leaf

area due to hail damage, severe nutrient deficiencies (think nitrogen this year), severe leaf diseases (e.g., gray leaf spot or northern corn leaf blight), and insect feeding injury (e.g., grasshoppers). There is anecdotal and some research evidence that unusually warm nights (mid-70's or warmer) during early grain fill periods may also contribute to abortion of tip kernels.

Ear size potential can influence the occurrence of barren tips. Remember that potential ear size (number of ovules) is determined early in the development of the plant, from approximately V6 (six visible leaf collars) to V15. Favorable growing conditions during this period encourages large ear size potential, especially in terms of ovule number per row (ear length).

Lengthy potential ears heading into pollination obviously maximize the potential kernel set and grain yield. Sometimes, though, unusually lengthy ear size results in barren tips if the final tip silks emerge after the field's pollen shed is already complete and thus never receive pollen. If pollen is available to pollinate the late emerging tip silks of lengthy ears, the resulting kernels are often dramatically "younger" than the remainder of the kernels on the cob and, therefore, particularly sensitive to severe photosynthetic stress.

#### Yield Consequence

Obviously, absent kernels translate to lost yield potential. Mathematically, for every absent kernel per row on an 18-row corn hybrid (assuming a final ear count of 28,000 ears per acre), the lost yield potential equals about 6 bushels per acre. Yes, yield loss can mount quickly as a consequence of barren tips.

(Continued on Page 4)

# Weather Information Table

Week ending Sunday September 28, 2003

Station	Past Week Weather Summary Data							Accumulation				
	Air						Avg	April 1, 2003 thru				
	Temperature				Precip.		4 in	September 28, 2003				
							Soil	Precipitation			GDD Base 50°F	
	Hi	Lo	Avg	DFN	Total	Days	Temp	Total	DFN	Days	Total	DFN
Northwest (1)												
Chalmers_5W	84	41	59	-4	2.43	5	62	38.05	+16.11	68	2840	-168
Valparaiso_AP_I	77	41	58	-4	0.93	4		23.98	+0.18	68	2655	-91
Wanatah	79	40	57	-4	1.05	5	63	25.14	+2.13	73	2471	-151
Wheatfield	80	41	58	-4	1.49	4		34.24	+11.92	64	2710	+30
Winamac	78	45	58	-4	2.60	6	59	29.78	+7.58	71	2675	-85
North Central(2)												
Plymouth	76	43	58	-5	1.89	6		25.75	+3.06	70	2577	-326
South_Bend	76	44	58	-3	1.65	5		21.91	-0.13	66	2712	-10
Young_America	82	43	59	-4	3.50	5		33.33	+11.84	66	2829	-26
Northeast (3)												
Columbia_City	79	39	57	-4	3.07	5	67	29.63	+8.06	78	2601	+3
Fort_Wayne	78	40	59	-4	3.05	5		31.88	+12.14	65	2675	-178
West Central (4)												
Greencastle	80	39	58	-7	3.31	4		34.30	+9.38	67	2695	-524
Perrysville	85	44	61	-3	3.12	6	64	28.57	+5.18	63	3021	+26
Spencer_Ag	79	42	59	-4	2.60	5		31.25	+6.30	82	2995	-26
Terre_Haute_AFB	82	41	61	-3	2.78	3		25.58	+2.02	58	3156	-39
W_Lafayette_6NW	83	42	60	-3	3.59	5	63	30.86	+8.93	73	2905	+65
Central (5)												
Eagle_Creek_AP	79	45	61	-3	1.33	5		28.89	+6.90	64	3076	-91
Greenfield	79	43	60	-4	3.78	5		32.61	+8.56	74	2891	-156
Indianapolis_AP	80	45	61	-3	3.03	5		34.26	+12.27	67	3151	-16
Indianapolis_SE	79	44	60	-5	2.33	4		29.67	+7.21	65	2923	-238
Tipton_Ag	81	41	58	-4	4.22	6	66	35.91	+13.60	69	2663	-91
East Central (6)												
Farmland	79	42	59	-3	3.18	5	59	31.84	+10.13	65	2762	+73
New_Castle	78	39	57	-5	2.47	4		29.67	+6.68	61	2401	-355
Southwest (7)												
Evansville	83	47	66	+0	1.86	4		24.01	+1.81	65	3594	-76
Freelandville	80	46	62	-4	3.29	5		30.47	+7.36	62	3281	-19
Shoals	80	44	61	-4	4.09	4		30.12	+5.17	65	3223	+22
Stendal	80	46	64	-2	1.83	4		26.86	+2.02	56	3437	-23
Vincennes_5NE	83	46	62	-3	3.22	7	66	30.50	+7.39	85	3355	+55
South Central(8)												
Leavenworth	80	47	62	-3	2.72	5		28.92	+3.71	87	3279	+100
Oolitic	80	45	61	-3	2.56	6	62	30.23	+6.37	74	3081	+24
Tell_City	82	50	65	-2	1.74	6		27.79	+2.36	61	3747	+201
Southeast (9)												
Brookville	80	43	61	-2	2.08	4		27.08	+3.94	68	3111	+208
Milan_5NE	78	45	60	-3	1.95	4		33.70	+10.64	99	2988	+85
Scottsburg	78	43	62	-3	2.50	5		29.75	+5.96	77	3104	-184

DFN = Departure From Normal (Using 1961-90 Normals Period).

GDD = Growing Degree Days.

Precipitation (Rainfall or melted snow/ice) in inches.

Precipitation Days = Days with precip of .01 inch or more.

Air Temperatures in Degrees Fahrenheit.

Copyright 2003: AWIS, Inc. All rights reserved.

The above weather information is provided by AWIS, Inc.  
For detailed ag weather forecasts and data visit the AWIS home page at  
[www.awis.com](http://www.awis.com) or call toll free at 1-888-798-9955.

## Tip Fill Problems in Corn (Continued)

But, it is also important to make sure you put the problem into perspective. Before you complain about barren tips to your seed rep, first evaluate the remainder of the cob. Typical kernel count for harvested ears of many hybrids is approximately 600. Hybrids whose ears are typically 16 rows in girth tend to set about 36 - 40 kernels on each row, while those that typically develop 20 rows of kernels tend to set closer to 30 kernels per row.

The point here is that if potential ear size (number of ovules) was quite large heading into pollination (favorable pre-pollination conditions) but failed to pollinate the tip silks, the resulting ears may still exhibit 30 – 40 kernels per row even though there is one to two inches of barren tip. In other words, harvested ear size will still average about 600 kernels and ultimate grain yield will be average to above average.

On the other hand, if kernel counts show only 20 to 25 kernels per row with lengthy barren cob tips, then that indeed indicates that the crop suffered significant stress conditions probably more than once during the season. Kernel counts per ear will be much less than 600 and

ultimate grain yield in this latter example will likely be less than average for that field and/or hybrid.

### Related References:

Nielsen, R. L. (Bob). 2002. **Yield Loss During Grain Fill.** Purdue Univ. Corny News Network. Available online at: <[http://www.kingcorn.org/news/articles.02/Grainfill\\_Stress-0802.html](http://www.kingcorn.org/news/articles.02/Grainfill_Stress-0802.html)>. [URL verified 9/17/03].

Nielsen, R. L. (Bob). 2002. **When and How Can I Estimate Corn Yields.** Purdue Univ. Corny News Network. Available online at: <[http://www.kingcorn.org/news/articles.02/Yld\\_Est-0723.html](http://www.kingcorn.org/news/articles.02/Yld_Est-0723.html)>. [URL verified 9/17/03].

Don't forget, this and other timely information about corn can be viewed at the Chat 'n Chew Café on the Web at <<http://www.kingcorn.org/cafe>>. For other information about corn, take a look at the Corn Growers' Guidebook on the Web at <<http://www.kingcorn.org>>. Also, this article contains color photographs, which can be viewed at: <[http://www.entm.purdue.edu/entomology/ext/targets/p&c/P&C2003/P&C26\\_2003.pdf](http://www.entm.purdue.edu/entomology/ext/targets/p&c/P&C2003/P&C26_2003.pdf)>, page 9.

Bob Nielsen, Department of Agronomy, Purdue University.

The INDIANA CROP WEATHER REPORT (USPS 675-770), (ISSN 0442-817X) is issued weekly April through November by the Indiana Agricultural Statistics Service, 1435 Win Henschel Blvd, Suite B105, West Lafayette IN 47906-4145. Second Class postage paid at Lafayette IN. For information on subscribing, send request to above address. POSTMASTER: Send address change to the Indiana Agricultural Statistics Service, 1435 Win Henschel Blvd, Suite B105, West Lafayette IN 47906-4145.